RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: $\frac{10/0/7, 47/A}{\text{Source:}}$ Date Processed by STIC: $\frac{3/14/2003}{\text{Source:}}$

ENTERED



OIPE

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/017,471A

DATE: 03/14/2003 force

Input Set : A:\p02329.app

Output Set: N:\CRF4\09282005\J017471A.raw

```
3 <110> APPLICANT: Takano, Eriko
         Bibb, Mervyn
 6 <120> TITLE OF INVENTION: Antibiotic Production
 8 <130> FILE REFERENCE: 0380-P02329US1
10 <140> CURRENT APPLICATION NUMBER: US 10/017,471A
11 <141> CURRENT FILING DATE: 2001-10-23
13 <150> PRIOR APPLICATION NUMBER: US 60/242,561
14 <151> PRIOR FILING DATE: 2000-10-23
16 <160> NUMBER OF SEQ ID NOS: 19
18 <170> SOFTWARE: PatentIn Ver. 2.1
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 18
22 <212> TYPE: DNA
23 <213> ORGANISM: Artificial Sequence
25 <220> FEATURE:
26 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
27
         oligonucleotide
29 <400> SEQUENCE: 1
30 gaccacgtsc csggcatg
                                                                      18
33 <210> SEQ ID NO: 2
34 <211> LENGTH: 24
35 <212> TYPE: DNA
36 <213> ORGANISM: Artificial Sequence
38 <220> FEATURE:
39 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
         oligonucleotide
42 <400> SEQUENCE: 2
                                                                      24
43 gtcctgstgg ccsgtsacsc gsac
46 <210> SEQ ID NO: 3
47 <211> LENGTH: 22
48 <212> TYPE: DNA
49 <213> ORGANISM: Artificial Sequence
51 <220> FEATURE:
52 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
         oligonucleotide
55 <400> SEQUENCE: 3
                                                                      22
56 gccagcaggt gggcgacctg ac
59 <210> SEQ ID NO: 4
60 <211> LENGTH: 25
61 <212> TYPE: DNA
62 <213> ORGANISM: Artificial Sequence
64 <220> FEATURE:
65 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
```

DATE: 03/14/2003 Am RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/017,471A TIME: 11:06:00

Input Set : A:\p02329.app

Output Set: N:\CRF4\09282005\J017471A.raw

66 oligonucleotide 68 <400> SEQUENCE: 4 25 69 gategeegg teetgettgg ceatg 72 <210> SEQ ID NO: 5 73 <211> LENGTH: 24 74 <212> TYPE: DNA 75 <213> ORGANISM: Artificial Sequence 77 <220> FEATURE: 78 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic oligonucleotide 81 <400> SEQUENCE: 5 24 82 tatccagctg accgggaacg cgtc 85 <210> SEQ ID NO: 6 86 <211> LENGTH: 24 87 <212> TYPE: DNA 88 <213> ORGANISM: Artificial Sequence 90 <220> FEATURE: 91 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 92 oligonucleotide 94 <400> SEQUENCE: 6 24 95 atcgcccggt cctgcttggc catg 98 <210> SEQ ID NO: 7 99 <211> LENGTH: 22 100 <212> TYPE: DNA 101 <213> ORGANISM: Artificial Sequence 103 <220> FEATURE: 104 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 105 oligonucleotide 107 <400> SEQUENCE: 7 108 aagtagaggg ctcccttggt ca 22 111 <210> SEQ ID NO: 8 112 <211> LENGTH: 22 113 <212> TYPE: DNA 114 <213> ORGANISM: Artificial Sequence 116 <220> FEATURE: 117 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic oligonucleotide 120 <400> SEQUENCE: 8 22 121 caaaactact gcttcgggca tg 124 <210> SEQ ID NO: 9 125 <211> LENGTH: 22 126 <212> TYPE: DNA 127 <213> ORGANISM: Artificial Sequence 129 <220> FEATURE: 130 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 131 oligonucleotide 133 <400> SEQUENCE: 9 134 ctgcaccctg gtccggtgga ca 22 137 <210> SEQ ID NO: 10

RAW SEQUENCE LISTING DATE: 03/14/2003 PATENT APPLICATION: US/10/017,471A TIME: 11:06:00

Input Set : A:\p02329.app

Output Set: N:\CRF4\09282005\J017471A.raw

138 <211> LENGTH: 24 139 <212> TYPE: DNA 140 <213> ORGANISM: Artificial Sequence 142 <220> FEATURE: 143 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 144 oligonucleotide 146 <400> SEQUENCE: 10 147 atcgcccqqt cctqcttqqc catq 24 150 <210> SEQ ID NO: 11 151 <211> LENGTH: 31 152 <212> TYPE: DNA 153 <213> ORGANISM: Artificial Sequence 155 <220> FEATURE: 156 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 157 oligonucleotide 159 <400> SEQUENCE: 11 160 catctgcagc gtgatcgtgg cagcttggta g 31 163 <210> SEQ ID NO: 12 164 <211> LENGTH: 401 165 <212> TYPE: DNA 166 <213> ORGANISM: Streptomyces coelicolor 168 <400> SEQUENCE: 12 169 gggcaggacg gcggtgaccg agaaccggtc accgcccttc ggtatccagc tgaccgggaa 60 170 cgcgtcctgc accctggtcc ggtggacaag cgccatcgga accggcaatg cggtttgttc 120 171 gatcgagttg gcatcggacg cagaattgat caaaactact gcttcgggca tgggtccccc 180 172 ccaggaatca tgtgatgccg agctgttctg tatgcgcgaa cgttaagata cagactgagc 240 173 ggtttttttt ctatccttcc cgggggagac atgaacaagg aggcaggcat ggccaagcag 300 174 gaccgggcga tccgcacgcg gcagacgatc ctggacgccg cggcgcaggt cttcgagaag 360 175 cagggctacc aagctgccac gatcacggag atcctcaagg t 178 <210> SEQ ID NO: 13 179 <211> LENGTH: 401 180 <212> TYPE: DNA 181 <213> ORGANISM: Streptomyces coelicolor 183 <400> SEQUENCE: 13 184 accttgagga teteegtgat egtggeaget tggtageeet gettetegaa gaeetgegee 60 185 geggegteca ggategtetg eegegtgegg ategeeeggt eetgettgge catgeetgee 120 186 teettqttea tqteteecce qqqaaqqata qaaaaaaaac cqctcaqtet qtatettaac 180 187 gttcgcgcat acagaacagc tcggcatcac atgattcctg ggggggaccc atgcccgaag 240 188 cagtagtttt gatcaattct gcgtccgatg ccaactcgat cgaacaaacc gcattgccgg 300 189 ttccgatggc gcttgtccac cggaccaggg tgcaggacgc gttcccggtc agctggatac 360 190 cgaagggcgg tgaccggttc tcggtcaccg ccgtcctgcc c 401 193 <210> SEQ ID NO: 14 194 <211> LENGTH: 57 195 <212> TYPE: PRT 196 <213> ORGANISM: Streptomyces coelicolor 198 <400> SEQUENCE: 14 199 Met Pro Glu Ala Val Val Leu Ile Asn Ser Ala Ser Asp Ala Asn Ser

202 Ile Glu Gln Thr Ala Leu Pro Val Pro Met Ala Leu Val His Arg Thr

RAW SEQUENCE LISTING

TIME: 11:06:00 PATENT APPLICATION: US/10/017,471A

Input Set : A:\p02329.app

Output Set: N:\CRF4\09282005\J017471A.raw

203				20		25					. 30					
205	Arg	Val	Gln	Asp	Ala	Phe	Pro	Val	Ser	Trp	Ile	Pro	Lys	Gly	Gly	Asp
206			35					40					45			
208	Arg	Phe	Ser	Val	Thr	Ala	Val	Leu	Pro							
209		50					55									
212	<210	<210> SEQ ID NO: 15														
213	<21	l> LI	ENGT	H: 3	7											
214	<212	2> T	YPE:	PRT			•									
215	<213	3 > OI	RGAN	ISM:	Streptomyces coelicolor											
217	< 400)> SI	EQUE	NCE:	15											
218	Met	Ala	Lys	Gln	Asp	Arg	Ala	Ile	Arg	Thr	Arg	Gln	Thr	Ile	Leu	Asp
219	1				5					10					15	
	Ala	Ala	Ala	Gln	Val	Phe	Glu	Lys	Gln	Gly	Tyr	Gln	Ala	Ala	Thr	Ile
222				20					25		•			30		
	Thr Glu Ile Leu Lys															
225		35														
		<210> SEQ ID NO: 16														
		<211> LENGTH: 215 <212> TYPE: PRT														
										-						
					Streptomyces coelicolor											
				NCE:		7	73 -	~ 1 -	7	m1	3	~1	m1	7 1 -	.	*
		Ата	ьуs	Gln		Arg	Ala	ııe	Arg		Arg	GIN	Thr	ше		Asp
235	1	77.	77-	~1 ·-	5	D1	01	T	~1	10	Ш	~ 1	77.	7 J -	15	T1.
	Ala	Ala	Ala	Gln	vaı	Pne	GIU	ьуѕ		GIY	Tyr	GIN	Ala		THE	тте
238	Th∽	C1.,	Tla	20	T ***	₹7 .]	ת ד ת	C1	25	mhx	T	C1	777	30	TT	Dho
241	TIIL	GIU	35	Leu	гуя	Val	Ala	40	vaı	TIIL	гуѕ	GLY	45	ьеи	ıyı	Pne
	Hic	Dhe		Ser	Tare	Glu	Glu		בומ	T.611	G1v	V-1		Aen	Δla	Gln
244	111.5	50	GIII	Jer	цуз	Giu	55	Jeu	AIU	ыси	Gry	60	LIIC	дор	AIU	0111
	Glu		Pro	Gln	Δla	Val		G111	Gln	Pro	Len		Len	Gln	Glu	Len
247	65			01		70		O_u	01		75	5	204	· · · · ·	024	80
		Asp	Met	Gly	Met		Phe	Cvs	His	Ara		Ara	Thr	Asn	Val	
250				1	85	•		- 4		90					95	
	Ala	Arg	Ala	Gly	Val	Arq	Leu	Ser	Met	Asp	Gln	Gln	Ala	His	Gly	Leu
253		_		100		_			105	-				110	•	
255	Asp	Arg	Arg	Gly	Pro	Phe	Arg	Arg	Trp	His	Glu	Thr	Leu	Leu	Lys	Leu
256			115	_				120					125			
258	Leu	Asn	Gln	Ala	Lys	Glu	Asn	Gly	Glu	Leu	Leu	Pro	His	Val	Val	Thr
259		130					135					140				
261	Thr	Asp	Ser	Ala	Asp	Leu	Tyr	Val	Gly	Thr	Phe	Ala	Gly	Ile	Gln	Val
262	145					150					155					160
264	Val	Ser	Gln	Thr	Val	Ser	Asp	Tyr	Gln	Asp	Leu	Glu	His	Arg	Tyr	Ala
265					165		•			170					175	
267	Leu	Leu	Gln	Lys	His	Ile	Leu	Pro	Ala	Ile	Ala	Val	Pro	Ser	Val	Leu
268				180					185					190		
270	Ala	Ala	Leu	Asp	Leu	Ser	Glu	Glu	Arg	Gly	Ala	Arg		Ala	Ala	Glu
271			195					200					205			
	Leu	Ala	Pro	Thr	Gly	Lys	Asp									
274		210					215									

RAW SEQUENCE LISTING DATE: 03/14/2003 FIRE PATENT APPLICATION: US/10/017,471A TIME: 11:06:00

Input Set : A:\p02329.app

Output Set: N:\CRF4\09282005\J017471A.raw

```
277 <210> SEQ ID NO: 17
278 <211> LENGTH: 313
279 <212> TYPE: PRT
280 <213> ORGANISM: Streptomyces coelicolor
282 <400> SEQUENCE: 17
283 Met Pro Glu Ala Val Val Leu Ile Asn Ser Ala Ser Asp Ala Asn Ser
286 Ile Glu Gln Thr Ala Leu Pro Val Pro Met Ala Leu Val His Arg Thr
                                    25
289 Arg Val Gln Asp Ala Phe Pro Val Ser Trp Ile Pro Lys Gly Gly Asp
                                40
292 Arg Phe Ser Val Thr Ala Val Leu Pro His Asp His Pro Phe Phe Ala
                            55
295 Pro Val His Gly Asp Arg His Asp Pro Leu Leu Ile Ala Glu Thr Leu
                        70
298 Arg Gln Ala Ala Met Leu Val Phe His Ala Gly Tyr Gly Val Pro Val
                    85
301 Gly Tyr His Phe Leu Met Thr Leu Asp Tyr Thr Cys His Leu Asp His
                                   105
304 Leu Gly Val Ser Gly Glu Val Ala Glu Leu Glu Val Glu Val Ala Cys
305 115
                               120
307 Ser Gln Leu Lys Phe Arg Gly Gly Gln Pro Val Gln Gly Gln Val Asp
                          135
310 Trp Ala Val Arg Arg Ala Gly Arg Leu Ala Ala Thr Gly Thr Ala Thr
                       150
                                           155
313 Thr Arg Phe Thr Ser Pro Gln Val Tyr Arg Arg Met Arg Gly Asp Phe
                   165
                                      170 ·
316 Ala Thr Pro Thr Ala Ser Val Pro Gly Thr Ala Pro Val Pro Ala Ala
               180
                                   185
319 Arg Ala Gly Arg Thr Arg Asp Glu Asp Val Val Leu Ser Ala Ser Ser
                               200
322 Gln Gln Asp Thr Trp Arg Leu Arg Val Asp Thr Ser His Pro Thr Leu
                           215
325 Phe Gln Arg Pro Asn Asp His Val Pro Gly Met Leu Leu Glu Ala
                                           235
                       230
328 Ala Arg Gln Ala Ala Cys Leu Val Thr Gly Pro Ala Pro Phe Val Pro
                   245
331 Ser Ile Gly Gly Thr Arg Phe Val Arg Tyr Ala Glu Phe Asp Ser Pro
               260
                                   265
334 Cys Trp Ile Gln Ala Thr Val Arg Pro Gly Pro Ala Ala Gly Leu Thr
335 275
                               280
337 Thr Val Arg Val Thr Gly His Gln Asp Gly Ser Leu Val Phe Leu Thr
                           295
                                               300
340 Thr Leu Ser Gly Pro Ala Phe Ser Gly
344 <210> SEQ ID NO: 18
345 <211> LENGTH: 262
346 <212> TYPE: PRT
347 <213> ORGANISM: Streptomyces coelicolor
```

VERIFICATION SUMMARY

DATE: 03/14/2003 Ame TIME: 11:06:01 DATE:

PATENT APPLICATION: US/10/017,471A

Input Set : A:\p02329.app
Output Set: N:\CRF4\09282005\J017471A.raw